Uva Wellassa University of Sri Lanka
Faculty of Applied Sciences
Department of Computer Science and Informatics
CST225-3 Data Structures and Analysis of Algorithms
CA 01-Practical

Instructions: **Allocated Time: 1 hour**

This paper has two parts, part A and part B. Part A contains 2 questions and part B contains 2 questions. Answer only 2 questions, selecting one question from part A and one question from part B.

For each question you should include the screenshot of the output.

Rename your folder as UWU_CST_20_XXX

Upload your source code to the given link in the VLE.

Part A

1) Write a program to reverse a given string input by using a stack in Java.

   Example:

   Original: Hello, World!

   Reversed: !dlroW ,olleH

2) Write a program to check balanced parentheses using a stack data structure.

Part B

1) Implement a queue using a linked List. Perform the following operations and show the content of the queue after each operation. Assume that the queue is initially empty.
   i. Insert A, B and then C
   ii. Delete an element
   iii. Insert D and then E
   iv. Delete two elements
   v. Insert F

2) Implement a Linked List and perform the following operations and show the content of the list after each operation.

   i. Add A,B,C,D,E to the list
   ii. Make “C” as the first element and “D” as the last element

iii. Make “E” as the second element
iv. Print the list
v. Remove “B” from the list
vi. Print the list after removal